

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							February 2002					
BUDGET ACTIVITY 5 - Engineering and manufacturing development				PE NUMBER AND TITLE 0604801A - Aviation - Eng Dev				PROJECT C45				
COST (In Thousands)				FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
C45	AIRCREW INTEGRATED SYS-ED			10698	4032	3150	2433	2437	2356	2347	Continuing	Continuing
<p><u>A. Mission Description and Budget Item Justification:</u> Aircrew Integrated Systems (ACIS) - Engineering Manufacturing Development (EMD) project provides engineering and manufacturing development for improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness of the Army Transformation aircraft including the RAH-66 Comanche, AH-64 Apache/Longbow, CH-47 Improved Cargo Helicopter, and the UH-60 Black Hawk. These programs include those systems and items of equipment which are unique and necessary for the sustainment, survivability, and performance of Army aircrews and troops on the future integrated battlefield and related training missions. The Air Warrior program will provide the aircrew with a systems approach to chemical and biological (CB) protection, noise protection, microclimate conditioning, crash and post-crash survivability, concealment and environmental protection, ballistic protection, night vision capability, heads-up display, directed energy eye protection and flame/heat protection. Specifically, Air Warrior will enable the Army Aviation Warfighter to exceed the approved Operational Requirements Document mission length of 5.3 hours, as opposed to the 1.6 hours of mission capability that exists today with aviators in full chemical/biological protective gear. Preplanned block improvements integrating new technologies into the Air Warrior ensemble will continue to enhance and maximize aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety and survivability in force modernization aircraft. These funds also resource improved laser protection against emerging new threat systems and product improvement of existing helmets to improve performance and increased commonality. The Air Warrior program is a vital soldier system, is linked to the Land Warrior program through the Soldier Systems Capstone Requirements Document and is one of the Army's 7 core programs for the objective force. The Retinal Scanning Display (RSD) effort develops RSD technology for incorporation into helmet-mounted displays of Army aircrews. The Cockpit Air Bag System (CABS) is a supplemental restraint system that reduces aviator deaths and injuries caused by body and head flailing against cockpit structures to improve crash survivability and reduce potential injuries and fatalities. The CABS includes integration into the aircraft platform of common components, including Air Bag modules and the crash sensor and system packaging. Maximum advantage will be taken of simulation to reduce program technical risk through early user evaluation and to reduce program design and test cost and schedules. This project does not duplicate any aircraft platform program efforts. Both joint and service independent efforts continue to be pursued under the scope of this project. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).</p>												

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<p><u>FY 2001 Accomplishments:</u></p> <ul style="list-style-type: none"> 5881 Continued Air Warrior Engineering Manufacturing Development for the Block 1 ensemble and components design 4817 Continued Helmet Mounted Display (Retinal Scanning Display) Engineering Manufacturing Development to include optical pinch correction for improved image quality <p>Total 10698</p> <p><u>FY 2002 Planned Program</u></p> <ul style="list-style-type: none"> 2263 Continue Air Warrior Engineering Manufacturing Development for the Block 1 ensemble and components design 1769 Develop Cockpit Air Bag System integration for the CH-47 Cargo aircraft platform <p>Total 4032</p> <p><u>FY 2003 Planned Program</u></p> <ul style="list-style-type: none"> 3150 Complete Air Warrior Block 1 ensemble Engineering Manufacturing Development and begin the integration of preplanned Air Warrior Block 2 improvements <p>Total 3150</p>		

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<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	11993	2263	2281
Appropriated Value	12104	4063	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-31	0
b. SBIR / STTR	-329	0	0
c. Omnibus or Other Above Threshold Reprogramming	0	0	0
d. Below Threshold Reprogramming	-966	0	0
e. Rescissions	-111	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	869
Current Budget Submit (FY 2003 PB)	10698	4032	3150

FY 2001: Funds realigned to higher priority requirements resulting in \$966 thousand decrease.
FY 2002: \$1.8 million congressional increase for Cockpit Air Bag System integration for the CH-47 Cargo aircraft platform.
FY 2003: Increase to accelerate, by 4 to 5 years, Air Warrior integration into the UH-60M.

<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDTE,A PE 0603801A PROJ DB45 - ACIS AD	3845	6823	1688	2929	2916	3497	3490	Continue	Continue
Aircraft Procurement, Army SSN AZ3110 - ACIS	10494	10179	15215	34668	34526	35622	36734	Continue	Continue

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D. Acquisition Strategy: An Air Warrior Program Definition and Risk Reduction (PDRR) development contract was awarded in FY 1997 to perform a functional requirements analysis and consider user requirements and available technologies to optimize recommended alternatives within the constraints of cost as an independent variable. The Air Warrior basic ensemble program was approved to proceed into an engineering manufacturing development system life cycle phase in 1st Quarter, FY 1999. Currently, a combined government and contractor team is developing Air Warrior improvements and integrating those components into a Block I Air Warrior ensemble that will be integrated with the Objective Force aircraft. Prototypes that represent the Block 1 Air Warrior ensemble have been developed for test and evaluation. The Air Warrior aircraft platform specific nonrecurring production engineering will begin during FY 2002 in preparation for the Block 1 ensemble production, aircraft integration, and fielding. Beginning in FY 2003, Engineering Manufacturing Development of preplanned product improvements to the Block 1 ensemble will integrate joint and new technologies as block improvements to the Air Warrior ensemble. Performance specifications for the joint service improved laser eye protection program are being developed and will be used for production competition. The Retinal Scanning Display technology is being developed for integration into helmet mounted displays for Army aviators and for the Future Combat System crewmembers. The Cockpit Air Bag System (CABS) is being integrated into the CH-47 aircraft platform by the original development contractor for the CABS.

E. Schedule Profile

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Air Warrior System Critical Design Review	2Q						
Begin Air Warrior System Test	3Q						
Begin Air Warrior System Developmental and Operational Tests		1Q					
Begin Air Warrior nonrecurring production engineering integration into aircraft platforms		2Q					
Air Warrior Basic ensemble Full Rate Production Decision			2Q				
Advanced Development of Air Warrior Block improvements		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Engineering Development of Air Warrior Block improvements			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)									February 2002			
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Development	SS-CPFF & C/FP	Various	9087	4150	2Q	1367	1Q	2696	1Q	Continue	Continue	Continue
b . Helmet Mounted Display	SS-CPFF	Microvision, Seattle, WA & Various	10952	4600	2Q	0		0		0	15552	15552
c . Cockpit Air Bag System integration into CH-47 Cargo	SS-FFP	Simula Inc., Phoenix, AZ	0	0		1769	2Q	0		0	1769	1769
Subtotal:			20039	8750		3136		2696		Continue	Continue	Continue
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR and Project Order	Various Government	1457	443	1-4Q	277	1-4Q	250	1-4Q	Continue	Continue	Continue
Subtotal:			1457	443		277		250		Continue	Continue	Continue

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Testing	MIPR	Various Government	230	735	1Q	518	1Q	102	2Q	Continue	Continue	Continue
Subtotal:			230	735		518		102		Continue	Continue	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Administration	Allotment		564	770	1-4Q	101	1-4Q	102	1-4Q	Continue	Continue	Continue
Subtotal:			564	770		101		102		Continue	Continue	Continue
Project Total Cost:			22290	10698		4032		3150		Continue	Continue	Continue